

What is claimed is:

1. An apparatus for preventing an auto-convergence error in a projection television receiver (TV) provided with a screen for displaying an image signal and first to eighth sensing units having first and second optical sensors for sensing a pattern displayed on the screen, the apparatus comprising:

first and second amplifying units for receiving and amplifying sensed values sensed by the first to fourth sensing units and the fifth to eighth sensing units with predetermined multiple amplification factors;

first and second comparators for receiving and comparing amplified values outputted from the first and second amplifying units;

an inverter for inverting output values of the first and second comparators;

an operation unit for AND-gating the outputs of the amplifying units and outputs of the inverter; and

a microcomputer for receiving an output of the operation unit, judging a degree of convergence correction, and outputting a corresponding control signal.

2. The apparatus of claim 1, wherein the operation unit comprises:

an XOR operation unit for receiving and XOR-gating signals inputted to non-inverting (+) terminals of the first and second comparators; and

an AND gate for receiving and AND-gating an output of the XOR operation unit and the output of the inverter.

3. An apparatus for preventing an auto-convergence error in a projection television receiver (TV) provided with a screen for displaying an image signal and first to eighth sensing units having first and second optical sensors for sensing a pattern displayed on the screen, the apparatus comprising:

a first amplifying unit for receiving and amplifying sensed values outputted through first optical sensors provided in the first to fourth sensing units and sensed values outputted through second optical sensors provided in the first to fourth sensing units;

a second amplifying unit for receiving and amplifying sensed values outputted through first optical sensors provided in the fifth to eighth sensing units and sensed values outputted through second optical sensors provided in the fifth to eighth sensing units;

a comparing unit for receiving and comparing amplified values outputted from the first and second amplifying units;

an inverter for inverting output values of the comparing unit;

a first operation unit for receiving and operating output values from all output terminals of the first and second amplifying units;

a second operation unit for receiving and operating output values of the first operation unit and the inverter; and

a microcomputer for outputting a control signal for a convergence control in accordance with an output of the second operation unit.

4. The apparatus of claim 3, wherein the first amplifying unit comprises:

second, fourth, sixth and eighth amplifiers for receiving and amplifying the sensed values outputted through the first optical sensors in the first to fourth sensing units; and

first, third, fifth and seventh amplifiers for receiving and amplifying the sensed values outputted through the second optical sensors in the first to fourth sensing units.

5. The apparatus of claim 3, wherein the second amplifying unit comprises:

10<sup>th</sup>, 12<sup>th</sup>, 14<sup>th</sup> and 16<sup>th</sup> amplifiers for receiving and amplifying the sensed values outputted through the first optical sensors in the fifth to eighth sensing units; and

9<sup>th</sup>, 11<sup>th</sup>, 13<sup>th</sup> and 15<sup>th</sup> amplifiers for receiving and amplifying the sensed values outputted through the second optical sensors in the fifth to eighth sensing units.

6. The apparatus of claim 3, wherein the first operation unit receives and XOR-gates all the output values of the first and second amplifying units.

7. The apparatus of claim 3, wherein the second operation unit receives and AND-gates the outputs of the first operation unit and the inverter.

8. The apparatus of claim 3, wherein the second operation unit further comprises a latch for providing results of the AND-gating to the microcomputer.

9. An apparatus for preventing an auto-convergence error in a projection television receiver (TV) provided with a screen for displaying an image signal and first to eighth sensing units having first and second optical sensors for sensing a pattern displayed on the screen, the apparatus comprising:

a first amplifying unit for receiving and amplifying sensed values outputted through first optical sensors provided in the first to fourth sensing units and sensed values outputted through second optical sensors provided in the first to fourth sensing units;

a second amplifying unit for receiving and amplifying sensed values outputted through first optical sensors provided in the fifth to eighth sensing units and sensed values outputted through second optical sensors provided in the fifth to eighth sensing units;

first and second comparing units for receiving and comparing the sensed values of the first to eighth sensing units which are outputted from the first and second amplifying units;

first and second inverter units for receiving and inverting all output values of the first and second comparing units;

first and second latch units for receiving outputs of the first and second inverter units and latching data; and

a microcomputer for receiving outputs of the first and second latch units and outputting a control signal for a convergence control.

10. The apparatus of claim 9, wherein the first comparing unit comprises first to fourth comparators for receiving and comparing the sensed values of the first to fourth sensing units which are amplified through the first amplifying unit; and

the second comparing unit comprises fifth to eighth comparators for receiving and comparing the sensed values of the fifth to eighth sensing units which are amplified through the second amplifying unit.

11. The apparatus of claim 9, wherein the first inverter unit comprises first to fourth inverters for inverting the outputs of the first comparing unit; and

the second inverter unit comprises fifth to eighth inverters for inverting the outputs of the second comparing unit.

12. The apparatus of claim 9, wherein the first latch unit comprises first to fourth D-type flip-flops for latching the output values of the first inverter unit; and

the second latch unit comprises fifth to eighth D-type flip-flops for latching the output values of the second inverter unit.

13. The apparatus of claim 9, wherein the microcomputer receives all the outputs of the latch units through its different ports, and outputs the control signal for the corresponding convergence control.